



LUNDS
UNIVERSITET

Matematikcentrum

Matematik NF

Compilation report for Linear algebra 2, autumn 2021

The module Linear Algebra 2, 6 credits, is part of the two courses MATB22 Linear Algebra 2, 7.5 credits, and ÄMAD02 Mathematics with Didactics, 15 credits. MATB22 also contains a programming project worth 1.5 credits. Only the module Linear Algebra 2 and the programming project are included in this survey.

Module leader: Kjell Elfström

Other teachers: Raul Hindov, Lea Miko Versbach, Niklas Kotarsky.

Number of students: MATB22: 90. ÄMAD02: 1.

Grades in the regular examination: MATB22 (VG, G, U): 14 VG, 28 G, 21 U, ÄMAD02 (G, U): 1 G.

Evaluation

Compilation of the evaluation: See the following pages.

Teacher's comments: The course was taught in about the same way as last term. Lectures were given on campus and at the same time broadcast on zoom. Seminars were only held online. Nevertheless, the students seem to be less pleased with the course this term than last term. This seems to be true of every aspect of the course except the lectures and the programming project. The lectures have about the same quality as before and the programming project has increased its popularity.

One notable aspect is the course literature. In the spring of 2021, many students appreciated it for its rigour and structure. This term, more students seem to be interested in learning to solve standard problems from examples than to get a good understanding of the mathematics involved. There are of course some exceptions to this also this term. One cannot please all, and for a teacher in mathematics, it is of course more appealing to try to please those interested in mathematics.

Evaluation of changes since the last time the module ran: The previous evaluation did not cause any changes.

Suggestions for changes prior to the next time the module will be offered: The result of the survey does not call for any change.

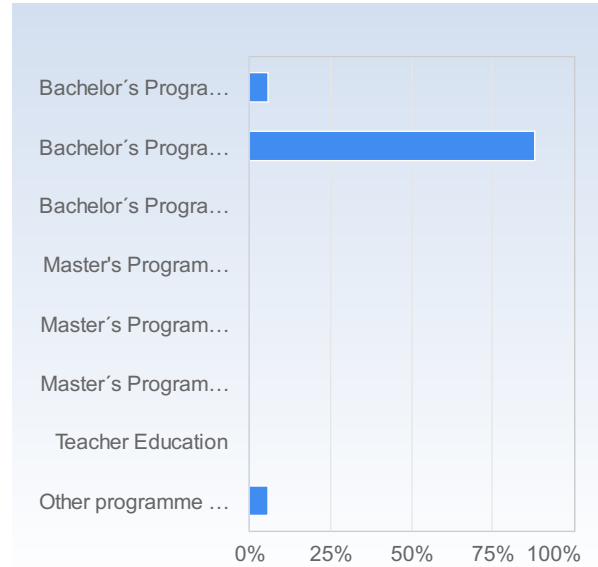
Compiler and date of compilation report: Kjell Elfström, 10 November 2021.

MATB22-ht21

Answer Count: 17

I have studied this course as part of

I have studied this course as part of	Number of responses
Bachelor's Programme in Mathematics	1 (5,9%)
Bachelor's Programme in Physics, Theoretical Physics, Astronomy	15 (88,2%)
Bachelor's Programme, other specialisation	0 (0,0%)
Master's Programme in Mathematics	0 (0,0%)
Master's Programme in Mathematical Statistics	0 (0,0%)
Master's Programme, other specialisation	0 (0,0%)
Teacher Education	0 (0,0%)
Other programme or as stand-alone course	1 (5,9%)
Total	17 (100,0%)

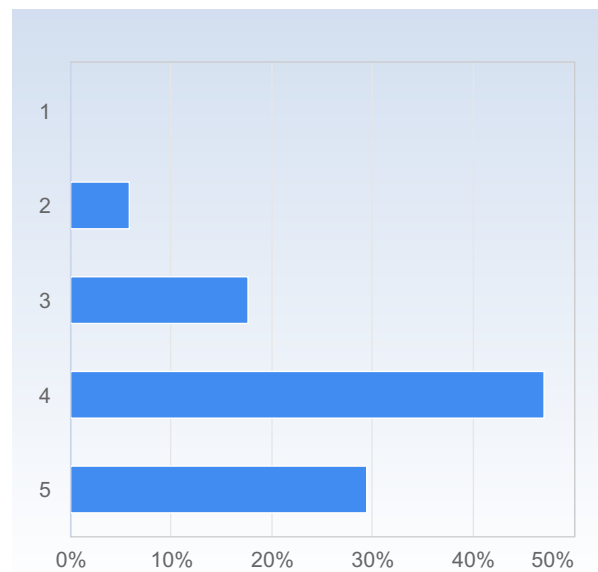


I have studied this course as part of	Mean	Standard Deviation
	2,3	1,5

On the scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

2. My prior knowledge has been sufficient to assimilate the contents of this course.

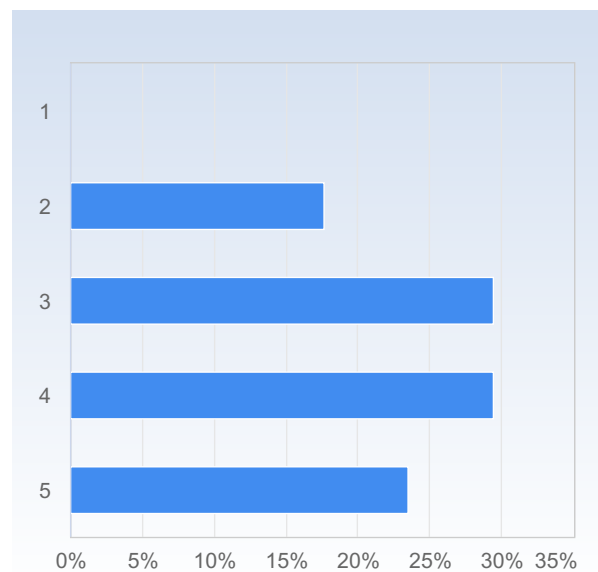
2. My prior knowledge has been sufficient to assimilate the contents of this course.	Number of responses
1	0 (0,0%)
2	1 (5,9%)
3	3 (17,6%)
4	8 (47,1%)
5	5 (29,4%)
Total	17 (100,0%)



	Mean	Standard Deviation
2. My prior knowledge has been sufficient to assimilate the contents of this course.	4,0	0,9

3. I have participated actively in the course.

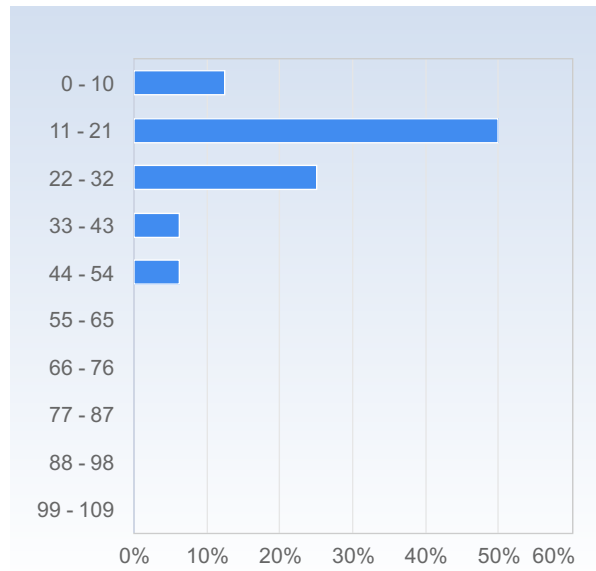
3. I have participated actively in the course.	Number of responses
1	0 (0,0%)
2	3 (17,6%)
3	5 (29,4%)
4	5 (29,4%)
5	4 (23,5%)
Total	17 (100,0%)



	Mean	Standard Deviation
3. I have participated actively in the course.	3,6	1,1

Average number of hours spent in total on the course per week (including scheduled activities):

Average number of hours spent in total on the course per week (including scheduled activities):	Number of responses
0 - 10	2 (12,5%)
11 - 21	8 (50,0%)
22 - 32	4 (25,0%)
33 - 43	1 (6,3%)
44 - 54	1 (6,3%)
55 - 65	0 (0,0%)
66 - 76	0 (0,0%)
77 - 87	0 (0,0%)
88 - 98	0 (0,0%)
99 - 109	0 (0,0%)
Total	16 (100,0%)



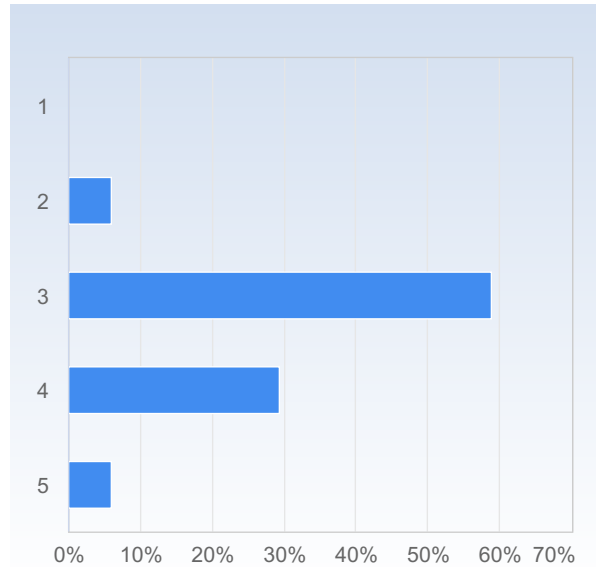
Average number of hours spent in total on the course per week (including scheduled activities):	Mean	Standard Deviation
	21,4	9,9

The course in general

On the scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

The way the course was taught and organised suited me.

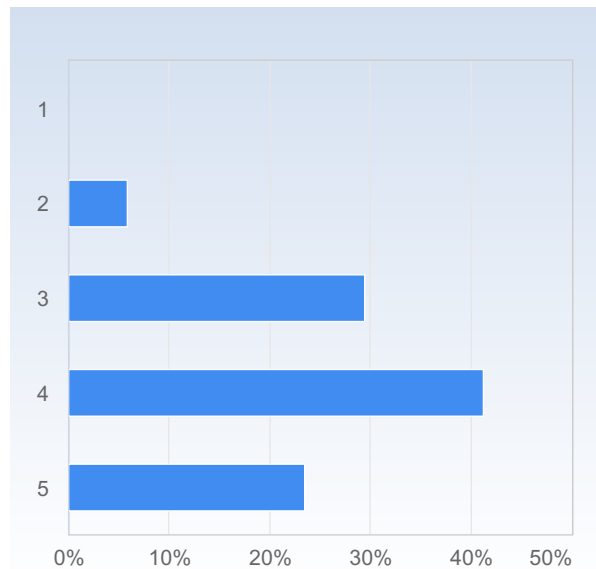
The way the course was taught and organised suited me.	Number of responses
1	0 (0,0%)
2	1 (5,9%)
3	10 (58,8%)
4	5 (29,4%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The way the course was taught and organised suited me.	3,4	0,7

The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.

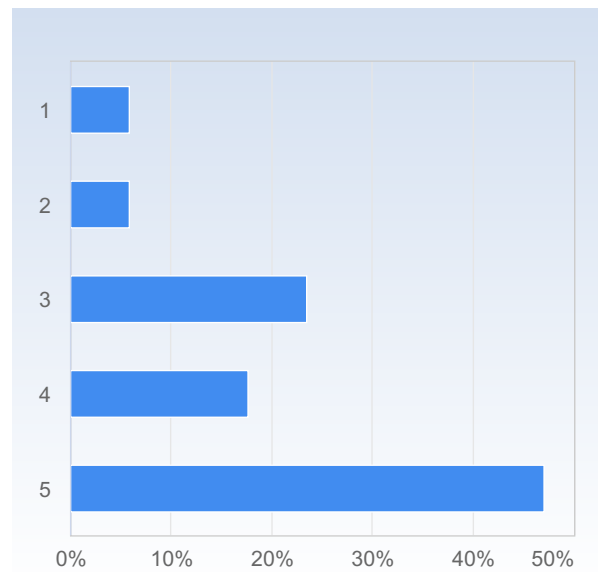
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	Number of responses
1	0 (0,0%)
2	1 (5,9%)
3	5 (29,4%)
4	7 (41,2%)
5	4 (23,5%)
Total	17 (100,0%)



	Mean	Standard Deviation
The number of teacher lead activities (lectures, seminars etc.) has been satisfactory.	3,8	0,9

The lectures were valuable for my learning.

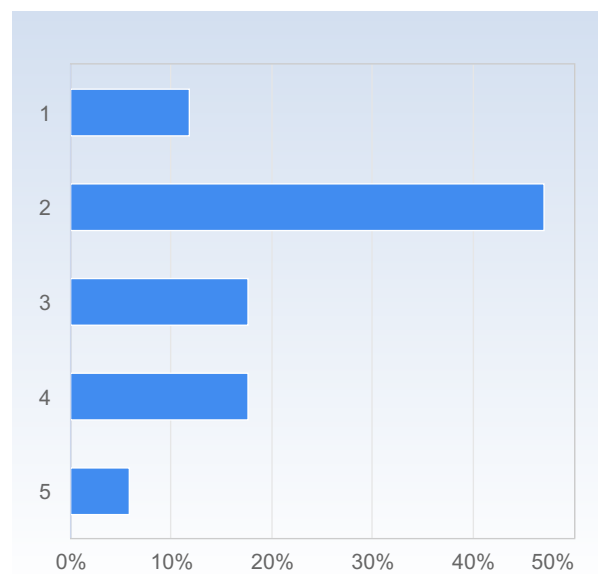
The lectures were valuable for my learning.	Number of responses
1	1 (5,9%)
2	1 (5,9%)
3	4 (23,5%)
4	3 (17,6%)
5	8 (47,1%)
Total	17 (100,0%)



The lectures were valuable for my learning.	Mean	Standard Deviation
	3,9	1,2

The seminars were valuable for my learning.

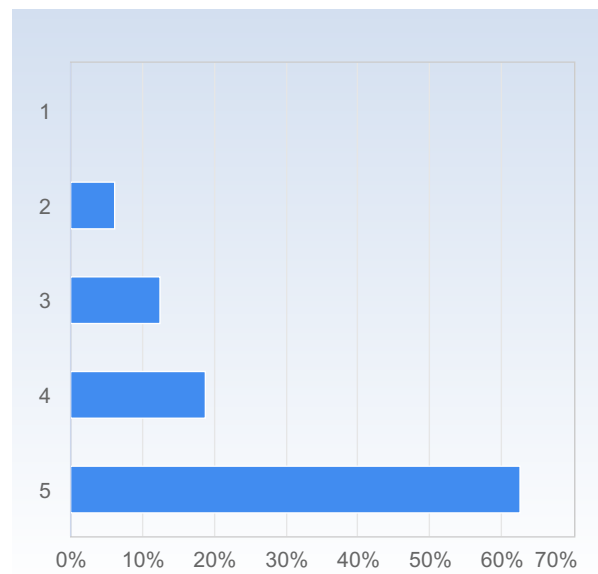
The seminars were valuable for my learning.	Number of responses
1	2 (11,8%)
2	8 (47,1%)
3	3 (17,6%)
4	3 (17,6%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The seminars were valuable for my learning.	2,6	1,1

Studying on my own was valuable for my learning.

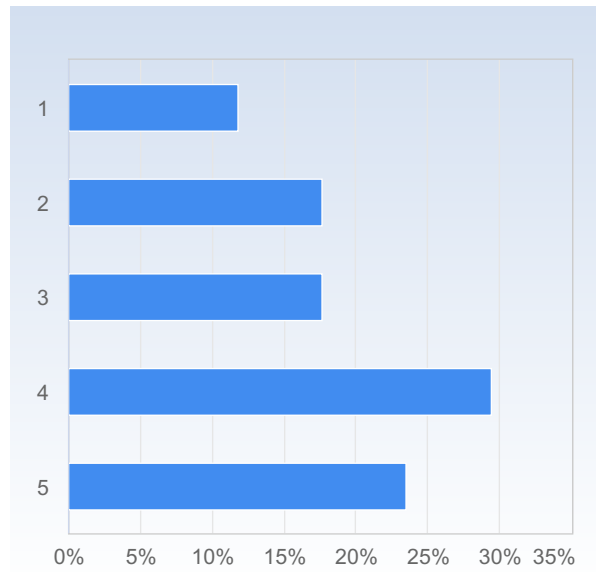
Studying on my own was valuable for my learning.	Number of responses
1	0 (0,0%)
2	1 (6,3%)
3	2 (12,5%)
4	3 (18,8%)
5	10 (62,5%)
Total	16 (100,0%)



	Mean	Standard Deviation
Studying on my own was valuable for my learning.	4,4	1,0

The course literature/material was a valuable learning resource.

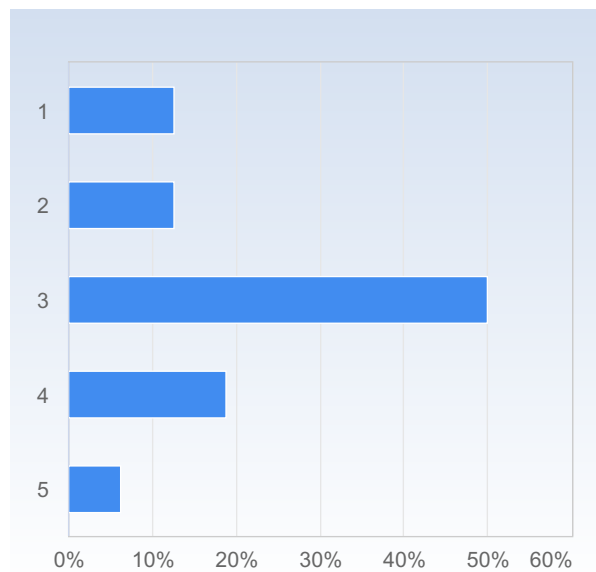
The course literature/material was a valuable learning resource.	Number of responses
1	2 (11,8%)
2	3 (17,6%)
3	3 (17,6%)
4	5 (29,4%)
5	4 (23,5%)
Total	17 (100,0%)



The course literature/material was a valuable learning resource.	Mean	Standard Deviation
	3,4	1,4

The assignments were valuable for my learning.

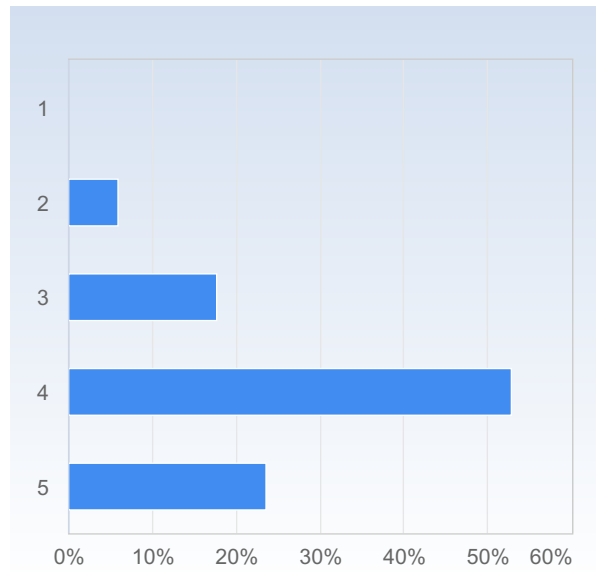
The assignments were valuable for my learning.	Number of responses
1	2 (12,5%)
2	2 (12,5%)
3	8 (50,0%)
4	3 (18,8%)
5	1 (6,3%)
Total	16 (100,0%)



The assignments were valuable for my learning.	Mean	Standard Deviation
	2,9	1,1

The information I received before the course start was satisfactory.

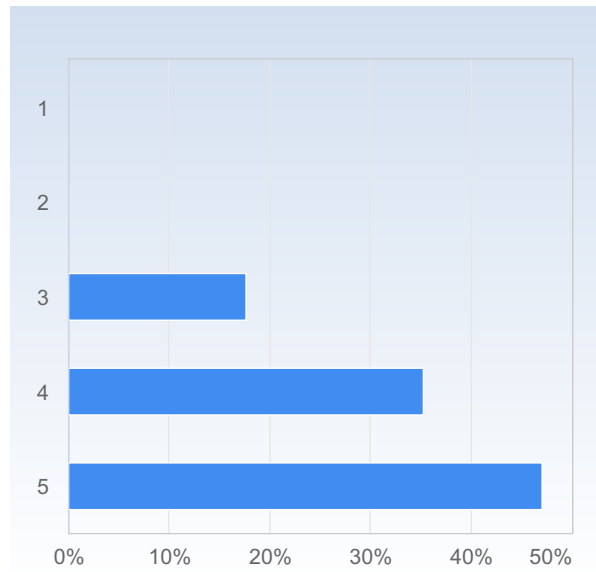
The information I received before the course start was satisfactory.	Number of responses
1	0 (0,0%)
2	1 (5,9%)
3	3 (17,6%)
4	9 (52,9%)
5	4 (23,5%)
Total	17 (100,0%)



The information I received before the course start was satisfactory.	Mean	Standard Deviation
	3,9	0,8

The communication with the teaching staff during the course was good.

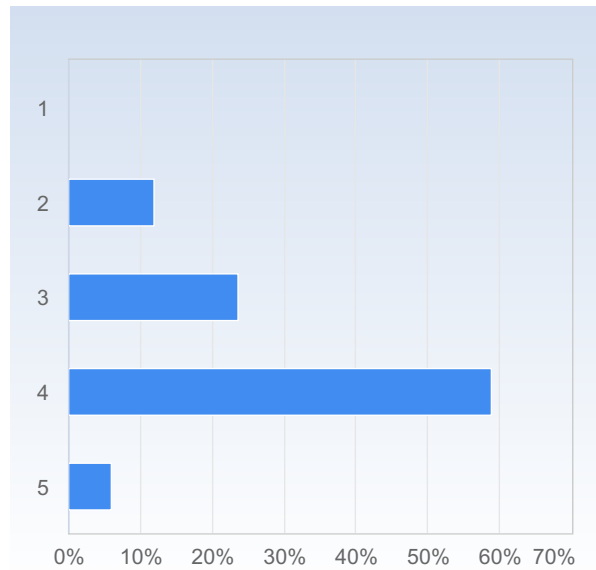
The communication with the teaching staff during the course was good.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	3 (17,6%)
4	6 (35,3%)
5	8 (47,1%)
Total	17 (100,0%)



The communication with the teaching staff during the course was good.	Mean	Standard Deviation
	4,3	0,8

It was clear throughout the course what was expected of me.

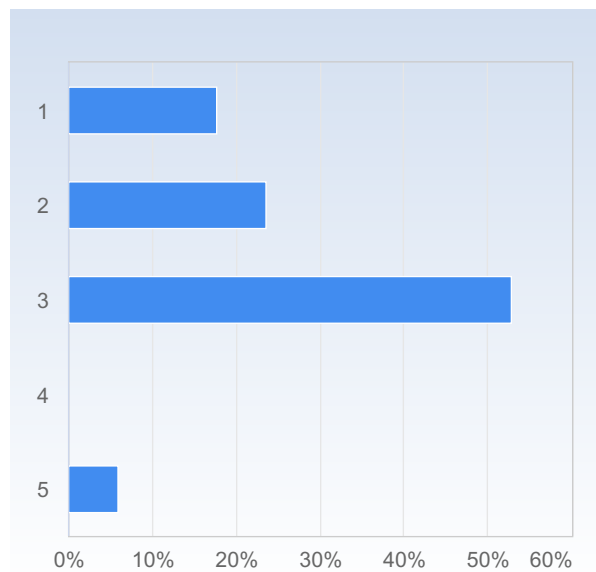
It was clear throughout the course what was expected of me.	Number of responses
1	0 (0,0%)
2	2 (11,8%)
3	4 (23,5%)
4	10 (58,8%)
5	1 (5,9%)
Total	17 (100,0%)



It was clear throughout the course what was expected of me.	Mean	Standard Deviation
	3,6	0,8

I have received valuable feedback from my teacher/teachers during the course.

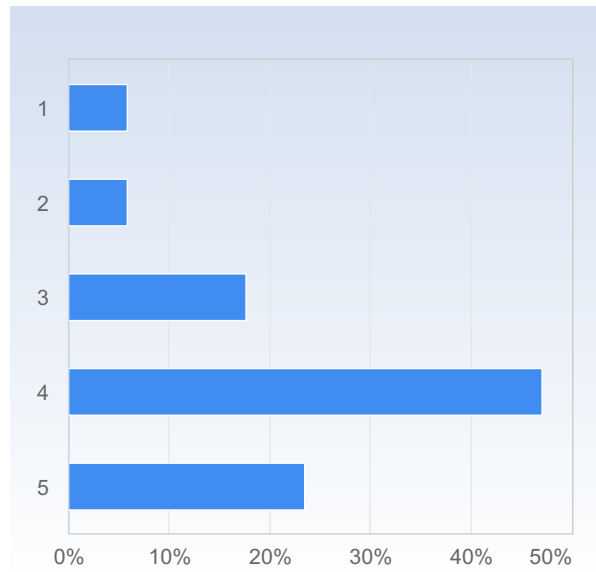
I have received valuable feedback from my teacher /teachers during the course.	Number of responses
1	3 (17,6%)
2	4 (23,5%)
3	9 (52,9%)
4	0 (0,0%)
5	1 (5,9%)
Total	17 (100,0%)



I have received valuable feedback from my teacher/teachers during the course.	Mean	Standard Deviation
	2,5	1,0

The course had a reasonable workload.

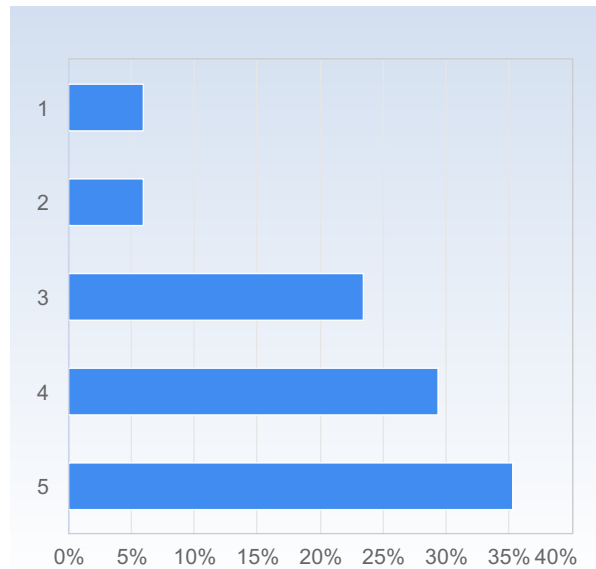
The course had a reasonable workload.	Number of responses
1	1 (5,9%)
2	1 (5,9%)
3	3 (17,6%)
4	8 (47,1%)
5	4 (23,5%)
Total	17 (100,0%)



The course had a reasonable workload.	Mean	Standard Deviation
	3,8	1,1

The workload was evenly distributed throughout the course.

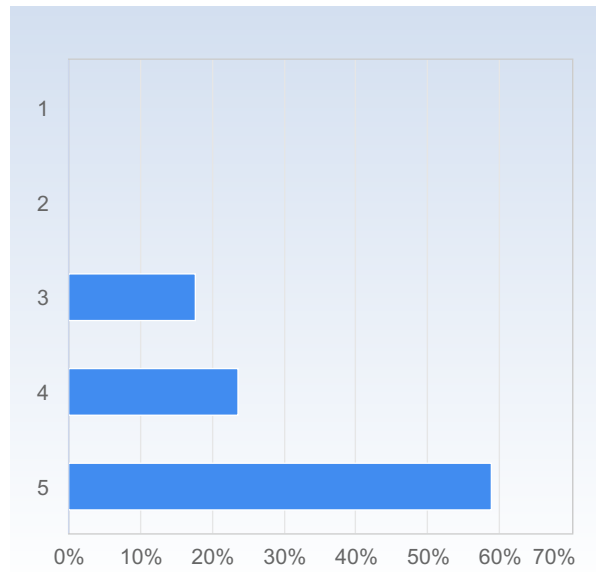
The workload was evenly distributed throughout the course.	Number of responses
1	1 (5,9%)
2	1 (5,9%)
3	4 (23,5%)
4	5 (29,4%)
5	6 (35,3%)
Total	17 (100,0%)



The workload was evenly distributed throughout the course.	Mean	Standard Deviation
	3,8	1,2

The examination matched the contents and level of the course.

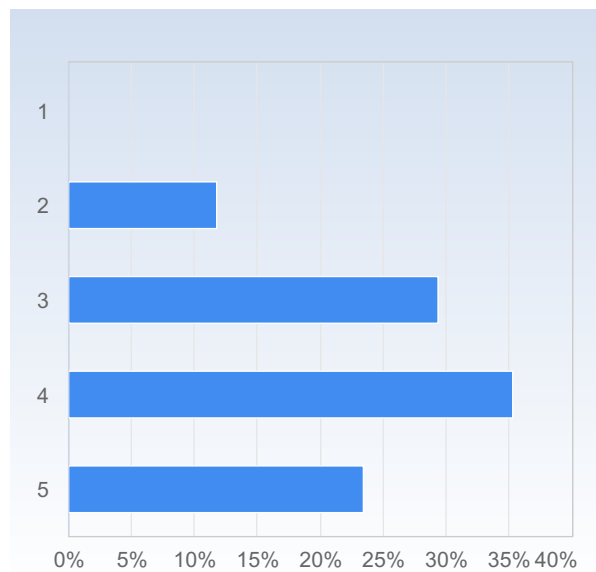
The examination matched the contents and level of the course.	Number of responses
1	0 (0,0%)
2	0 (0,0%)
3	3 (17,6%)
4	4 (23,5%)
5	10 (58,8%)
Total	17 (100,0%)



	Mean	Standard Deviation
The examination matched the contents and level of the course.	4,4	0,8

Overall, I am satisfied with the course.

Overall, I am satisfied with the course.	Number of responses
1	0 (0,0%)
2	2 (11,8%)
3	5 (29,4%)
4	6 (35,3%)
5	4 (23,5%)
Total	17 (100,0%)



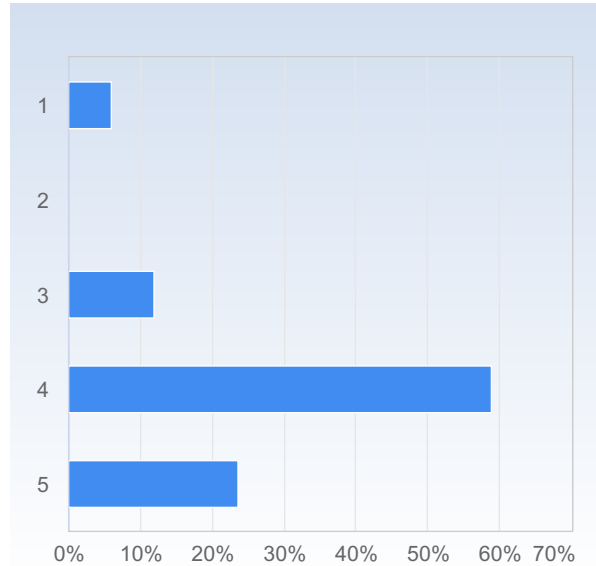
	Mean	Standard Deviation
Overall, I am satisfied with the course.	3,7	1,0

On the development of generic skills

On the scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely

The course has increased my ability to read a mathematical text.

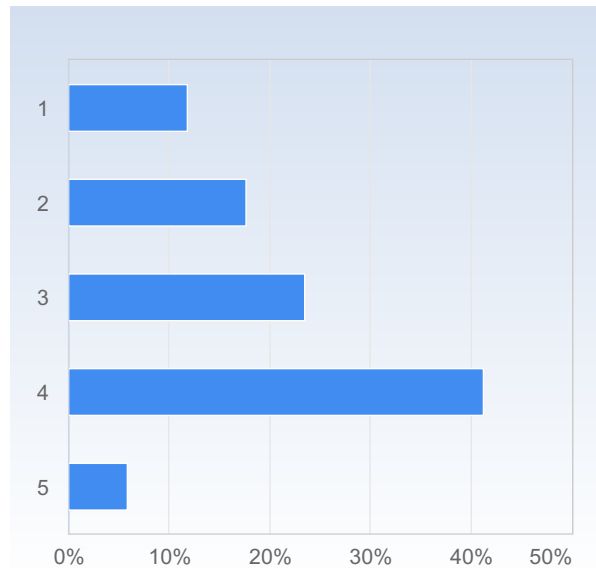
The course has increased my ability to read a mathematical text.	Number of responses
1	1 (5,9%)
2	0 (0,0%)
3	2 (11,8%)
4	10 (58,8%)
5	4 (23,5%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to read a mathematical text.	3,9	1,0

The course has increased my ability to communicate the subject in writing.

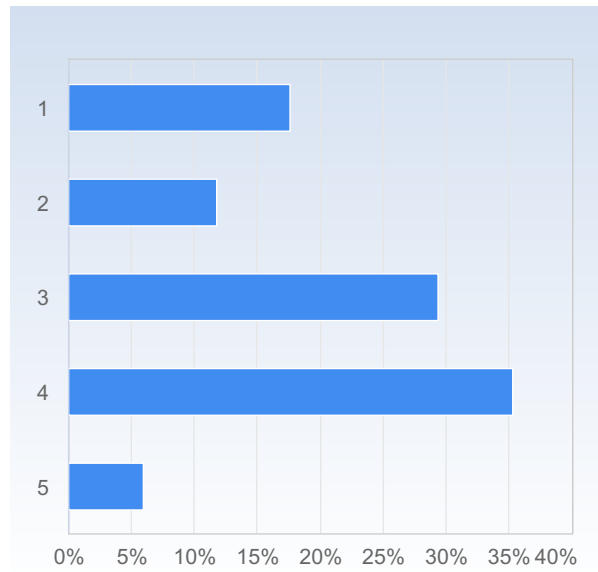
The course has increased my ability to communicate the subject in writing.	Number of responses
1	2 (11,8%)
2	3 (17,6%)
3	4 (23,5%)
4	7 (41,2%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject in writing.	3,1	1,2

The course has increased my ability to communicate the subject orally.

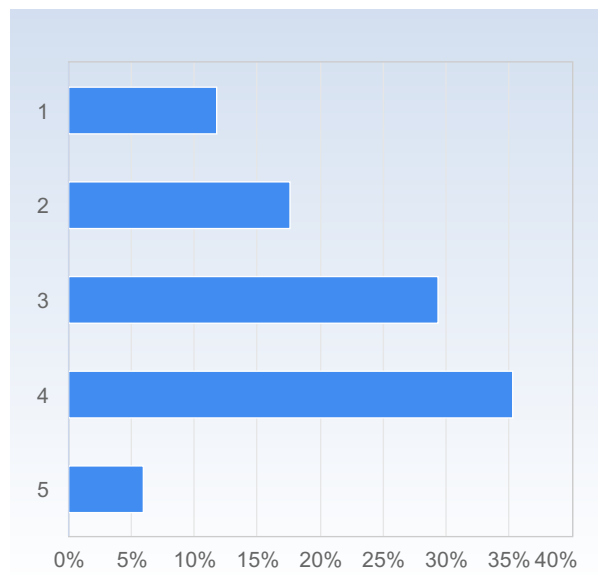
The course has increased my ability to communicate the subject orally.	Number of responses
1	3 (17,6%)
2	2 (11,8%)
3	5 (29,4%)
4	6 (35,3%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to communicate the subject orally.	3,0	1,2

The course has increased my ability to cooperate.

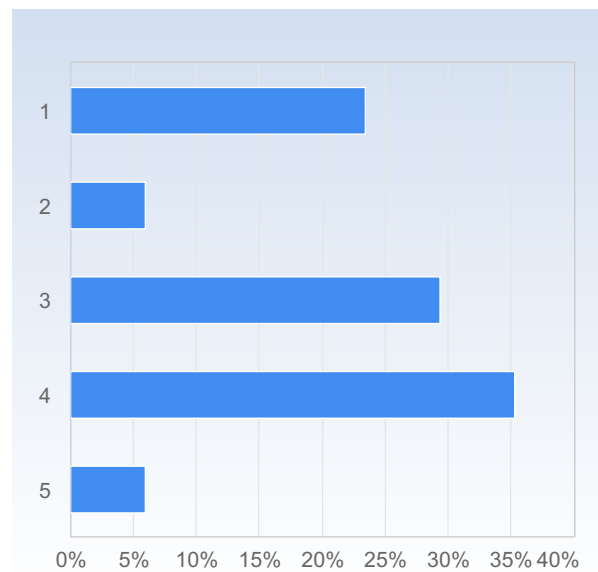
The course has increased my ability to cooperate.	Number of responses
1	2 (11,8%)
2	3 (17,6%)
3	5 (29,4%)
4	6 (35,3%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to cooperate.	3,1	1,1

The course has increased my ability to search and process information.

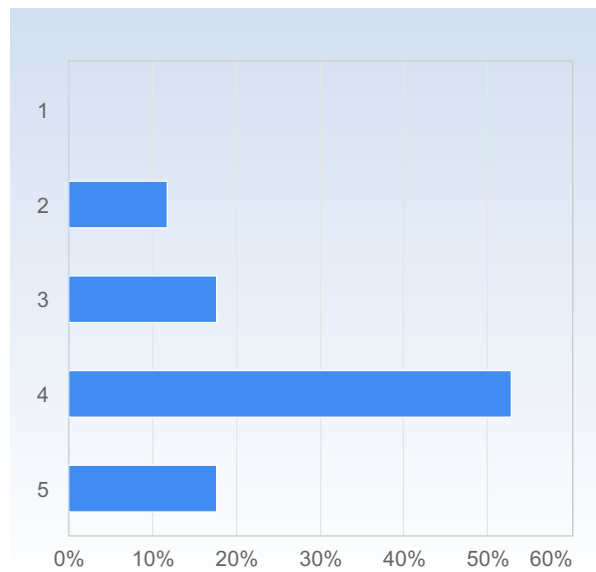
The course has increased my ability to search and process information.	Number of responses
1	4 (23,5%)
2	1 (5,9%)
3	5 (29,4%)
4	6 (35,3%)
5	1 (5,9%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to search and process information.	2,9	1,3

The course has increased my ability to analyze and solve problems.

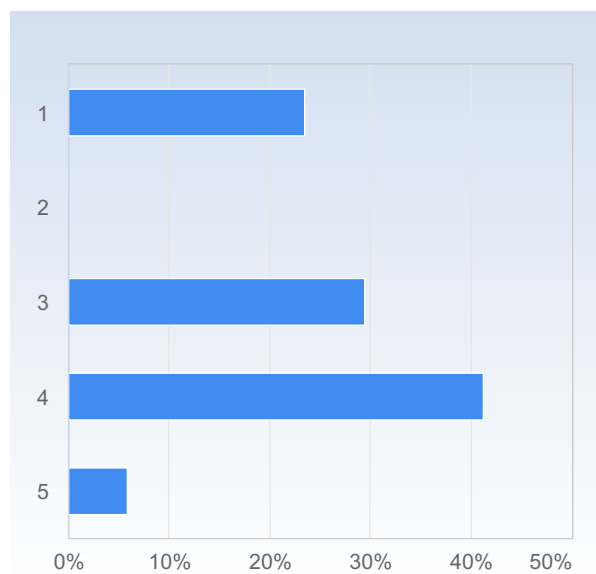
The course has increased my ability to analyze and solve problems.	Number of responses
1	0 (0,0%)
2	2 (11,8%)
3	3 (17,6%)
4	9 (52,9%)
5	3 (17,6%)
Total	17 (100,0%)



	Mean	Standard Deviation
The course has increased my ability to analyze and solve problems.	3,8	0,9

As a result of this course, I feel confident about tackling unfamiliar problems.

As a result of this course, I feel confident about tackling unfamiliar problems.	Number of responses
1	4 (23,5%)
2	0 (0,0%)
3	5 (29,4%)
4	7 (41,2%)
5	1 (5,9%)
Total	17 (100,0%)

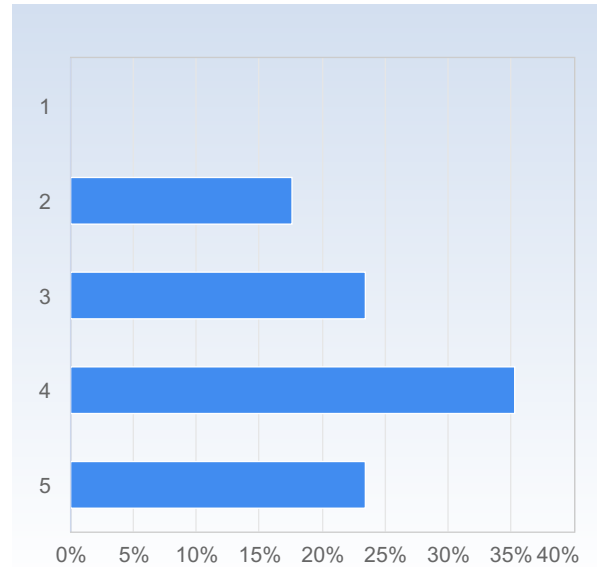


	Mean	Standard Deviation
As a result of this course, I feel confident about tackling unfamiliar problems.	3,1	1,3

On the programming project

On a scale 1-5 select the option that best matches your opinion: 1= disagree completely → 3= partly agree → 5= agree completely
 The programming project is closely related to the course contents.

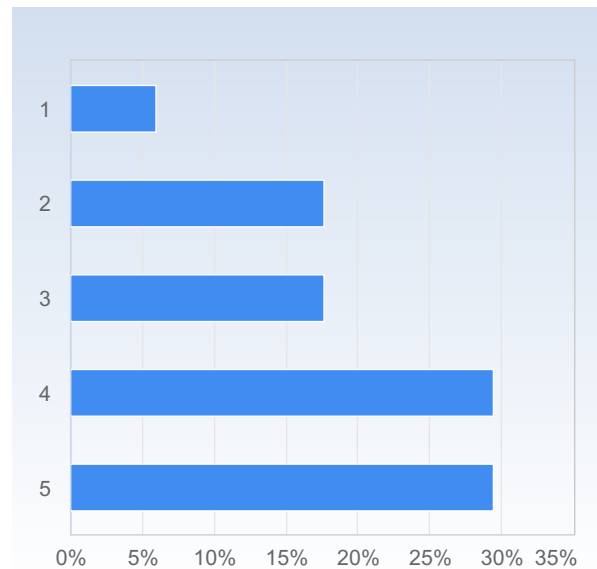
The programming project is closely related to the course contents.	Number of responses
1	0 (0,0%)
2	3 (17,6%)
3	4 (23,5%)
4	6 (35,3%)
5	4 (23,5%)
Total	17 (100,0%)



The programming project is closely related to the course contents.	Mean	Standard Deviation
	3,6	1,1

Owing to the programming project, I have increased my programming skills in Python.

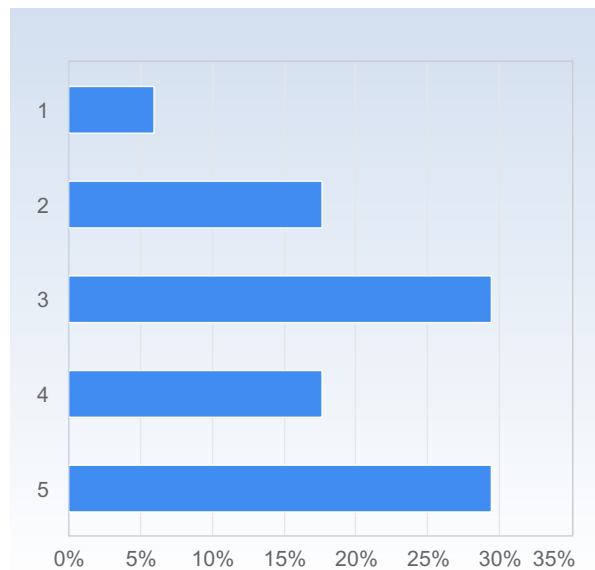
Owing to the programming project, I have increased my programming skills in Python.	Number of responses
1	1 (5,9%)
2	3 (17,6%)
3	3 (17,6%)
4	5 (29,4%)
5	5 (29,4%)
Total	17 (100,0%)



Owing to the programming project, I have increased my programming skills in Python.	Mean	Standard Deviation
	3,6	1,3

I believe that the programming project has been valuable for my future learning.

I believe that the programming project has been valuable for my future learning.	Number of responses
1	1 (5,9%)
2	3 (17,6%)
3	5 (29,4%)
4	3 (17,6%)
5	5 (29,4%)
Total	17 (100,0%)



	Mean	Standard Deviation
I believe that the programming project has been valuable for my future learning.	3,5	1,3

What did you appreciate most with the course?

What did you appreciate most with the course?
The seminars and the solutions being available afterwards
The amount of past exams
The new stuff I learned
The attention to having a rigorous (for the most part) backbone to every theorem and lemma.
Problemlösning.
programming project
Learning how to link projections, reflections, rotations and other transformations to matrices and being able to apply a function/matrix to a vector directly instead of having to use geometric arguments. Learning to solve system of linear ODE:s was also nice.
When Kjell demonstrated how to approach and solve problems so all the theorems and definitions were implemented.
It was very clear throughout the course what was expected of me.
I liked the structure of the course book and it was a very well organized course so it felt like I could just focus on learning the material
Going through examples.
The course book, the lectures and the structure of the course.
I think the content of the course was explained very well in the lectures and the book, and there were many exercises and past papers to apply what I learned.
It was satisfying to see what had been taught in the first linear algebra course handled in a more rigorous manner.
A clear indication of the course module throughout the period was helpful to keep the track of the subject and to maintain the pace of my study.

What do you think should be improved?

What do you think should be improved?

The course literature is very bad, being a wall of text consisting of definition after definition with a lack of good and relevant examples, especially for solving problems, as well as lacking diagrams to help with learning and make it more. This made it hard to process the material and frankly made it a chore to work through the book.

The text book, it was messy and it was hard to follow. Would appreciate more computational examples.

The course literature should be improved, Too many theorems to remember and the proofs are sometimes vague and hard to understand, it felt like you had to spend a lot of time reading due to the proofs not being clear sometimes.

Decreasing the attention to having a rigorous (for the most part) backbone to every theorem and lemma.

Whilst this is what I appreciate most about the course it was also part of the reason why understanding some theorems took longer for me than it should as "being hit by a brick wall" for specific statements usually isn't good for understanding.

Jag upplevde tempot som lite för högt. Fastnade man på något så blev man ohjälpligen långt efter och sedan var det nästan omöjligt att komma ifatt.

I problemlösningarna hade jag gärna sett fler detaljer. Som det var nu var det kortfattat vilket resulterade i att man gång på gång satt som ett frågetecken när man försökte begripa hur lösningen gick ihop.

Grupparbete var bra men jag upplever att programmeringen gång på gång gick över ens huvud vilket i sin tur stal värdefull tid från matteplugget då man skulle försöka sätta sig in i programmet och försöka begripa varför det inte ville fungera. Det bidrog i sin tur till att man blev ännu mer efter.

have fewer proofs

Reading the literature, especially when a lot of new terminology and new concepts were introduced, sometimes took a lot of time and it felt as if there were many steps in logic between sentences and equations that were skipped (or that I missed as there were too many new concepts to keep track of). During the lectures everything was covered very clearly and all of these steps were explained. I think I would have been able to study a lot more efficiently if these lectures had been recorded and uploaded to canvas as something to rewatch while reading the literature.

More concrete examples during the lectures would be helpful to make my physics brain understand what some theorems and definitions affect. Not until after a couple of chapters did I start to understand the meaning of the first chapters. Maybe even some alternative explanations or analogies could be an improvement. It might seem silly, but some intuitional theorems become abstract.

I feel like I would have needed a bit more time to get through the last chapters since they contained completely new material and it was hard to grasp everything when you at the same time had to start revising

The literature was a bit too dense and lacking explanation.

It was very hard to concentrate on the seminars.

It would have preferred to have the last week before the exams to be completely focussed on revision instead of finishing the course contents. That said we did have time to cover the most important aspects during our revision lectures,

The programming project could have used some improvements. Firstly, hardly any information was given about what to do, we were simply expected to start working. When we tried to do so, it turned out that we had not yet learnt the material the tasks required since they generally related to content lectured rather late in the course. The content required for the final task was lectured at the same time as we had to hand in the project which meant it was unnecessarily difficult to do the task if one wanted to do it in good time.

In the seminars, it would be great if we could have more explanation to the solutions/ methods rather than just writing down the solutions.

It would be much appreciated if we could have a couple of zoom/ in-person sessions where we can discuss or get help on the programming project.

Have you during this course experienced course literature, staff or teaching methods to be discriminatory in any way (gender, ethnicity, etc.)?

Have you during this course experienced course literature, staff or teaching methods to be discriminatory in any way (gender, ethnicity, etc.)?

-

No

No

Nej

no

No.

No

No, never

No

No.

No.

No

No.

N/A